4. WORK PLAN AND METHODOLOGY:

WORK PLAN:

Looking the necessity of present research work, work have been planned to be carried out in six parts. The works to be carried out in parts are as given:

1. Literatures survey in the area of related research works and deep review of literatures will be carried out during first six months.
2. Detailed survey of the area of Bastar region will be organized during next six month of first year to locate the area of occurrence of rock masses available in the region and identify the live quarries, from which rock is being continuously exploring for construction works.
3. The whole region of Bastar will be divided in suitable numbers of zones, according to area of occurrence of rock masses and available live quarries. The rock samples for laboratory testing will be collected in sufficient quantities from different identified live quarries from different zones during the first six months of second year.
4. Test specimens for different kinds of test will be prepared as per guide lines and methods given in **Indian Standard (IS) & Buero of Indian Standard (BIS)** Code of practice. The prepared test specimens will be tested in the laboratories of Civil Engineering Department of Government Engineering College Jagdalpur Bastar Chhattisgarch as per the recommendation given in IS & BIS during next six months of second year.
5. The results obtained from different kinds of test will be listed out and indexing will be made according to kinds of test for future references. The obtained results will be analyzed and compared with the data available in the books and papers of previous research during first six months of third year.
6. During last six months of third year thesis writing works with typing and printing and finally submission of thesis will be carried out.

METHODOLOGY:

The method of research works will be carried out on the basis of the recommendation of **Indian Standard (IS) and Beuro of Indian Standard (BIS) code** right from beginning collection of sample to indexing and analysis of results. The propose area for works will be divided in suitable number zones according to the area of occurrence of rock masses and rock samples will be collected from different identified quarries of each zones. The collected rock samples will be again divided in seven batches for seven different kinds of test. These each batches of rock samples will be again divided in three groups for preparation of three test samples and then the standard test specimens prepared for testing as per recommendation of IS and BIS. The experiment work will be finished with the tabulation of results and analysis and comparison. The methodology is going to divided in the five parts as given.

ZONING:

The presence of rock mass and their geological distribution in the Bastar region and as per the area of occurrence of quarries in the different region of whole Bastar region, it will be divided in suitable zones for collection of rocks samples.

COLLECTION OF SAMPLES:

The exploration of rocks is being done continuously from the different quarries of whole Bastar. For the purpose of present research work disturbed and non disturbed rock samples will be collected in sufficient quantity as per suggested method by **IS and BIS codes** for different kind of test. These collected rock samples from different quarries of different zones will be divided in the seven groups of each zone for seven kinds of tests.

PREPARATION OF SAMPLES:

The collected rock samples from different quarries will be divided in the seven groups of each zone for the preparation of test specimens for different kind test. The different kinds test specimens will be prepared as given below.

Batch -1(for Compressive Strength test):

The practical determination of compressive of rocks or stones involves making of a standard specimens. For the present study 3 numbers of cubical samples of 50 mm in size will be prepared by stone cutting machine very carefully for each zone.

Batch -2 (For Crushing Value test):

To perform this test, collected rock samples will be broken in the form of aggregate passing on 12.5 mm and retaining on 10 mm IS sieves to make standard test specimens and divided in the 3 groups of about 3.5 Kg each for all nine zones.

Batch-3 (For Water Absorption Value):

Water absorption gives an idea of strength of rock. Stones having more water absorption are more porous in nature and are generally unsuitable for important works. About 6.0 Kg of aggregate will be taken from each zones as a standard test sample and divided in 3 groups each.

***Batch-4 (For Density* test):**

About 6.0 Kg of collected rock samples in the form of aggregate will be taken as a standard test sample from each zone and divided in 3 groups each.

Batch-5 (For Specific Gravity):

Specific gravity is defined as the ratio of the weight of a given volume of solid rock at a given temperature to the weight of an equal volume of distilled water at that temperature. In other words, it is the ratio of the unit weight of solid to the replaced volume of that water. About 6.0 Kg of collected and broken rock samples will be taken as a standard test sample and divided in groups for each zones.

***Batch-6 (For Abrasion Value*):**

The aggregate grading have been standardized by IS and BIS code and a specified number of abrasive charge to be used in the test. About 30 Kg of collected rock sample passing through 80 mm and retaining to 40 mm IS sieve will be taken as a standard test sample and divided in 3 groups about 10 Kg (2.50 Kg 80 to 63 mm size, 2.50 Kg 63 to 50 mm size and 5.0 Kg 50 to 40 mm size) for each zones.

***Batch-7 (For Impact Value*)**:

The test sample consists of aggregates passing on 12.5 mm and retaining on 10 mm IS sieve about 4.50 Kg, dried in an oven for four hours at a temperature 100 ^{0}C and cooled, will be taken standard sample and divided in three groups for each zones.

METHOD OF TESTING:

The standard rock samples will be prepared as above mentioned method suggested by **IS and BIS codes** for all kind of tests for each zones. These standard test specimens/samples will be tested in the well defined equipments, in the laboratories of Civil Engineering Department of Government Engineering College Jagsalpur Bastar Chhattisgarh as per given guide lines and methods in **IS and BIS Codes**.

In the experimental programme right form beginning, collection of samples from different quarries of different zones to preparation of samples, testing method and there after tabulation of results and indexing will be carried out strictally as recommended by IS and BIS code.